Trend Study 8B-2-00

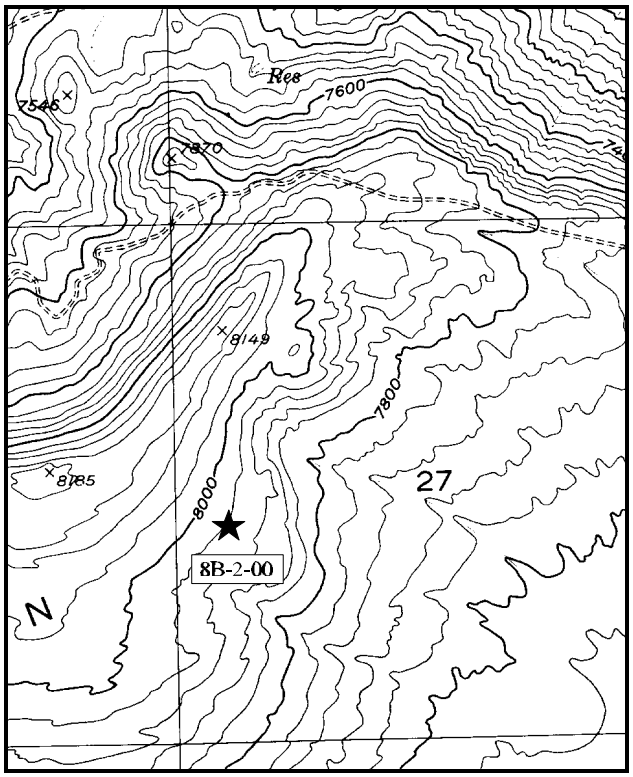
Study site name: Goslin Mountain . Range type: Big Sagebrush-Grass .

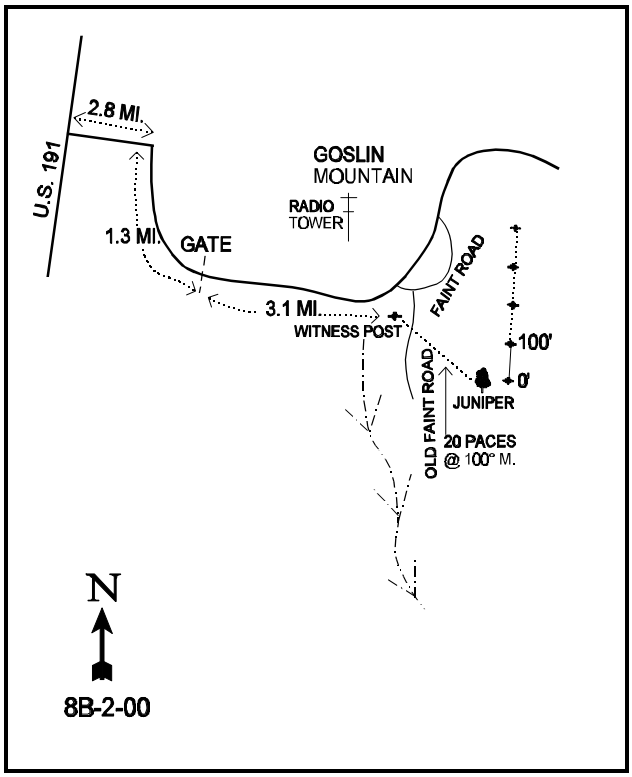
Compass bearing: frequency baseline 18°M .

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From Dutch John, proceed north towards Antelope Flat on Highway U.S. 191 for approximately 8 miles. Before the Wyoming border, turn east on the Antelope Flat Road toward Goslin Mountain. Go 2.8 miles and turn right towards Goslin Mountain. Proceed 1.3 miles to a gate. Continue up the mountain 3.1 miles to a turnoff to the left which goes to a radio tower. A little further down the main road there is a road to the right. Stop here and walk 20 paces down the right fork to a juniper on the left. The 0-foot baseline stake is located two paces east of the juniper.





Map Name: Goslin Mountain Diagrammatic Sketch

Township 3N , Range 23E , Section 27 UTM 4536284.097 N, 641644.204 E

DISCUSSION

Trend study No. 8B-2 (9-2)

The Goslin Mountain trend study samples a mountain big sagebrush-grass site near the summit of Goslin Mountain at an elevation of 7,920 feet. Aspect is to the east-southeast with a gradual slope of 10% to 15%. Deer, elk and antelope utilize the site year-round with less use occurring during severe winters. Cattle grazing is permitted in the area as part of the Goslin Mountain allotment managed by the BLM. Cattle grazing in this area takes place during the summer months on a deferred rotation schedule for 400 AUM's. The area is also considered important habitat for sage grouse. Pellet group quadrat frequency data from 1995 and 2000 indicate light use by elk, deer and cattle. A pellet group transect read along the study site baseline in 2000 estimates 15 deer and 3 elk days use/acre (37 ddu/ha and 7 edu/ha).

Soils are moderately shallow, coarse, rocky and well-drained. Effective rooting depth is estimated at just over 12 inches. Pavement and rocks are not abundant on the surface but occur throughout the profile. Soil texture is sandy loam which has a slightly acid pH (6.2). Phosphorus is limited at 4.6 ppm. Values less than 10 ppm can limit normal plant growth and development. Protective ground cover is abundant and well dispersed. However, there are some signs of past erosion in the form of soil pedestaling around shrubs and the bare areas which occur show some signs of active erosion. Many of these bare areas have very shallow soil at less than 4 inches in depth.

The key browse species on the site consists of a moderately dense stand of mountain big sagebrush which produced over half of the shrub cover in 1995 and 2000. Density has remained relatively stable over the years at around 2,500 plants/acre. The exception would be the increase in young plants in 1988. Use of the sagebrush has been mostly light to moderate with an increase in heavy use in 1995. Percent decadence increased from 3% in 1982 to 52% in 1988. Percent decadency has decreased and stabilized in 1995 and 2000 at just over 1/3 of the population. The proportion of the population showing poor vigor has steadily increased from 0% in 1982 to 18% in 2000. Decadent plants classified as dying numbered 361 plants/acre in 1995 and 320 in 2000. Reproduction needed to replace these plants has been quite variable. No seedlings or young were encountered in 1995. Currently ('00), biotic potential (#of seedlings) is marginal at 9% while young plants account for only 7% of the population.

Other important browse on the site consist of serviceberry, bitterbrush, and snowberry. Bitterbrush currently ('00) numbers 420 plants/acre, and provides 21% of the total shrub cover. They have a prostrate growth form with an average height of less than 2 feet. Bitterbrush currently ('00) shows mostly moderately hedging, has good vigor, and has a low incidence of decadence. The proportion of plants heavily hedged (>60% of twigs browsed) has steadily decreased from 63% in 1982 to 0% in 2000. Currently, two-thirds of the bitterbrush population show moderate use. There are small numbers of serviceberry and snowberry scattered throughout the site which are only lightly utilized.

The herbaceous understory is diverse and abundant. Grasses and forbs accounted for 46% of the total vegetative cover in 1995, increasing to 54% in 2000. Grasses make up the majority of the herbaceous cover, 69% in 1995 and 81% in 2000. The dominant grasses consist of needle-and-thread, oniongrass, Letterman needlegrass, and thickspike wheatgrass. It was reported in 1988 that the Poa's were identified to genus only because of the difficulty identifying grasses that year.

Forbs are also very diverse on the site but none are very abundant. Important species include silver lupine and low penstemon.

1982 APPARENT TREND ASSESSMENT

This site appears stable. Soil loss is not currently a serious problem. However, roadways and vehicle tracks are a point source for erosion. Off-road vehicle use should be discouraged if possible. The soil is fairly shallow and has a high erosion potential if disturbed. Shrubs, especially mountain big sagebrush, are the dominant species on the site and will continue to be so. The more preferred species, such as bitterbrush and serviceberry, are both heavily utilized and may eventually decline. Hopefully, ways can be found to prevent this or to encourage their expansion.

1988 TREND ASSESSMENT

Ground cover is almost unchanged from 1982. There is adequate litter cover (57%) and basal vegetative cover (12%). Although there is 25% bare ground with some soil movement occurring, especially along trails, the canopy and basal vegetative cover minimize the erosion hazard. Trend for the key browse species, mountain big sagebrush, is stable. Even though the population density has increased, percent decadence has also increased to 52%. The herbaceous understory trend is up due to an increase in the quadrat frequency of perennial grasses and especially forbs.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - up (5)

1995 TREND ASSESSMENT

Ground cover characteristics have improved since 1988. Percent litter cover has declined slightly due to prolonged drought, but percent bare ground has also declined from 25% to 17%. The high nested frequency values of vegetation and litter indicate well dispersed cover which protects the soil from serious erosion. The browse trend for mountain big sagebrush is mixed. Population density has declined from 4,866 plants/acre in 1988 to 2,480 by 1995. Much of this decrease can be attributed to the much larger sampling design that gives better estimates for shrub populations. The proportion of plants displaying heavy use and poor vigor have both increased. In addition, no seedlings or young plants were encountered in 1995. On the favorable side, percent decadency has declined from 52% to 33%. Trend is considered slightly down at this time but by the time of the next reading this population will most likely be smaller but more healthy with the continuation of drought. Trend for the herbaceous understory is slightly up with an increase in sum of nested frequency of perennial forbs and stable nested frequency values for the key perennial grasses, thickspike wheatgrass, oniongrass, needle-and-thread and Letterman needlegrass.

TREND ASSESSMENT
soil - slightly up (4)
browse - slightly down for mountain big sagebrush (2)
herbaceous understory - slightly up (4)

2000 TREND ASSESSMENT

Trend for soil is up slightly. Relative percent cover of vegetation increased, while cover of bare ground has declined. As a result, the proportion of protective cover (vegetation, litter and cryptogams) to bare ground has increased from 2.8 : 1 to 3.4 : 1. Erosion is currently not a problem on this site. Trend for the key browse species, mountain big sagebrush and bitterbrush is stable. Both have similar population densities compared to 1995. Use is lighter than 1995 levels and vigor is normal on most plants. Percent decadency on sagebrush is

stable as is the number of decadent plants that are classified as dying (361 plant/acre in 1995 and 320 in 2000). However, reproduction of sagebrush is poor and there is currently not enough young plants to replace all of the decadent and dying. This may lead to a slight decline in the sagebrush population in the future if drought conditions continue. Some of the vigor problems on sagebrush are obviously due to the dry conditions of the past few years. Trend for the herbaceous understory is up for perennial grasses, but slightly down for perennial forbs. Overall, the herbaceous trend is considered slightly up since perennial grasses provide the majority of the herbaceous cover. Needle-and-thread and Letterman needlegrass both declined significantly in nested frequency, while oniongrass increased significantly. Thickspike wheatgrass remained stable.

TREND ASSESSMENT
soil - slightly up (4)
browse - stable (3)
herbaceous understory - slightly up (4)

HERBACEOUS TRENDS --
Herd unit 08B, Study no: 2

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	136	144	150	58	51	58	55	1.06	2.82
G	Agropyron spicatum	a-	c37	b14	155	-	15	7	.42	.63
G	Agropyron trachycaulum	-	-	6	-	-	-	2	-	.30
G	Bromus carinatus	-	-	6	-	-	-	2	-	.18
G	Bromus tectorum (a)	-	2	-	-	-	1	-	.00	-
G	Carex spp.	22	32	31	-	9	15	13	.88	.75
G	Dactylis glomerata	-	1	-	-	-	1	-	.00	-
G	Koeleria cristata	b11	a-	ab2	-	5	-	1	-	.03
G	Leucopoa kingii	a-	ab3	b7	-	-	2	4	.06	.44
G	Melica bulbosa	a86	a102	b156	50	33	43	59	2.94	3.74
G	Muhlenbergia richardsonis	-	4	3	-	-	3	1	1.01	.00
G	Poa spp.	171	-	-	-	67	-	-	-	-
G	Poa bulbosa	-	3	22	-	-	1	8	.03	.17
G	Poa fendleriana	-	38	87	-	-	16	34	.45	2.25
G	Poa pratensis	-	5	43	-	-	2	15	.06	1.37
G	Poa secunda	-	25	38	43	-	9	15	.09	.36
G	Sitanion hystrix	b63	a-	a-	2	31	-	-	-	-
G	Stipa columbiana	b89	a7	b86	-	35	4	33	.07	2.58
G	Stipa comata	a118	b190	a139	27	51	62	49	4.46	7.60
G	Stipa lettermani	a54	b89	a34	49	25	34	14	1.57	.68
G	Unknown grass - perennial	b14	a-	a-	-	5	-	-	-	-

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
Total for Annual Grasses		0	2	0	0	0	1	0	0.00	0
Total for Perennial Grasses		764	680	824	244	312	265	312	13.11	23.96
Total for Grasses		764	682	824	244	312	266	312	13.12	23.96
F	Achillea millefolium	$_{b}$15	$_{a}$-	$_{a}$-	3	7	-	-	-	-
F	Agoseris glauca	$_{a}$-	$_{b}$53	$_{b}$64	-	-	26	26	.28	1.06
F	Allium spp.	$_{a}$21	$_{b}$139	$_{a}$35	-	9	61	18	.81	.12
F	Antennaria rosea	$_{b}$14	$_{a}$3	$_{ab}$9	1	7	1	5	.00	.07
F	Arabis spp.	3	3	2	-	3	1	1	.00	.00
F	Arenaria congesta	$_{a}$1	$_{b}$20	$_{b}$31	1	1	10	12	.20	.33
F	Astragalus argophyllus	$_{a}$3	$_{a}$5	$_{b}$15	3	1	2	7	.01	.13
F	Aster chilensis	16	16	7	-	7	7	4	.06	.07
F	Chaenactis douglasii	-	3	-	-	-	1	-	.00	-
F	Collomia linearis (a)	-	$_{b}$151	$_{a}$37	-	-	61	17	.75	.25
F	Comandra pallida	-	-	1	-	-	-	1	-	.00
F	Collinsia parviflora (a)	-	$_{b}$234	$_{a}$22	-	-	83	9	1.48	.09
F	Crepis acuminata	3	5	3	-	1	4	2	.04	.03
F	Cymopterus longipes	$_{a}$-	$_{b}$19	$_{b}$12	-	-	10	5	.05	.10
F	Delphinium nuttallianum	-	1	2	-	-	1	1	.00	.00
F	Descurainia pinnata (a)	-	5	6	-	-	2	3	.01	.01
F	Erigeron eatonii	$_{a}$-	$_{a}$7	$_{b}$28	-	-	2	13	.04	.11
F	Erigeron flagellaris	$_{b}$94	$_{a}$11	$_{a}$5	16	39	7	3	.06	.06
F	Eriogonum umbellatum	$_{b}$46	$_{a}$3	$_{a}$14	9	20	2	6	.02	.25
F	Gilia inconspicua (a)	-	4	-	-	-	1	-	.00	-
F	Heterotheca villosa	$_{a}$-	$_{a}$-	$_{b}$8	-	-	-	3	.03	.06
F	Lomatium spp.	-	4	-	-	-	2	-	.01	-
F	Lupinus argenteus	35	44	37	4	17	21	20	.51	.80
F	Microsteris gracilis (a)	-	31	29	-	-	15	10	.15	.07
F	Penstemon humilis	$_{a}$-	$_{b}$7	$_{b}$5	-	-	3	3	.16	.06
F	Petradoria pumila	-	-	1	-	-	-	1	-	.03
F	Phlox longifolia	$_{b}$117	$_{a}$73	$_{a}$70	-	51	32	30	.36	.40
F	Polygonum douglasii (a)	-	$_{b}$71	$_{a}$33	-	-	30	13	.17	.06
F	Senecio integerrimus	$_{a}$-	$_{b}$13	$_{a}$2	-	-	8	1	.09	.00
F	Senecio multilobatus	-	4	-	-	-	2	-	.03	-
F	Taraxacum officinale	$_{a}$4	$_{b}$36	$_{a}$13	-	2	15	6	.25	.22
F	Tragopogon dubius	-	3	5	-	-	1	2	.00	.06
F	Trifolium gymnocarpon	$_{a}$8	$_{b}$57	$_{b}$63	18	4	25	23	.15	.80
F	Unknown forb-perennial	$_{b}$33	$_{a}$-	$_{a}$-	-	19	-	-	-	-
F	Viola spp.	$_{a}$-	$_{a}$-	$_{b}$12	-	-	-	5	-	.24

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	Zigadenus paniculatus	8	2	-	-	4	1	-	.00	-
Total for Annual Forbs		0	496	127	0	0	192	52	2.57	0.50
Total for Perennial Forbs		421	531	444	55	192	245	198	3.21	5.09
Total for Forbs		421	1027	571	55	192	437	250	5.78	5.59

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 08B, Study no: 2

Type	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Amelanchier alnifolia	3	4	.30	1.54
B	Artemisia tridentata vaseyana	72	72	13.53	12.76
B	Chrysothamnus viscidiflorus lanceolatus	7	7	.42	.18
B	Eriogonum heracleoides	51	54	3.26	1.81
B	Gutierrezia sarothrae	3	0	.15	-
B	Mahonia repens	12	5	.48	.15
B	Purshia tridentata	15	20	3.13	5.00
B	Symphoricarpos oreophilus	10	8	.72	2.87
Total for Browse		173	170	22.01	24.33

CANOPY COVER --
Herd unit 08B, Study no: 2

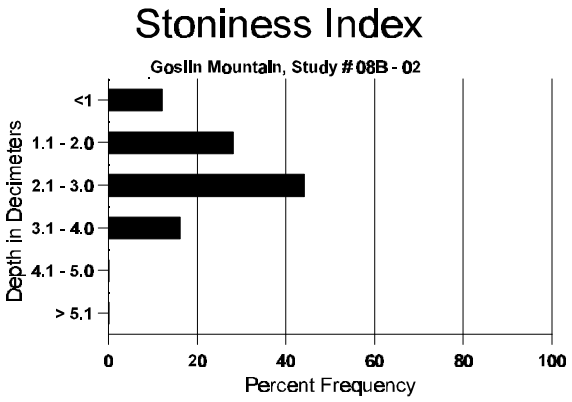
Species	Percent Cover	
	'95	'00
Juniperus scopulorum	-	2

BASIC COVER --
Herd unit 08B, Study no: 2

Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	363	370	8.50	12.00	41.94	57.47
Rock	149	80	2.75	2.00	3.28	5.05
Pavement	107	133	0	3.00	.84	2.42
Litter	395	384	60.25	57.50	50.97	58.79
Cryptogams	13	32	1.00	.25	.10	.38
Bare Ground	278	229	27.50	25.25	16.86	12.69

SOIL ANALYSIS DATA --
Herd Unit 8B, Study # 2, Study Name: Goslin Mountain

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
12.44	53.0 (14.02)	6.2	69.3	16.2	14.6	2.6	4.6	121.6	0.5



PELLET GROUP FREQUENCY --
Herd unit 08B, Study no: 2

Type	Quadrat Frequency '95	Quadrat Frequency '00
Rabbit	-	1
Elk	3	1
Deer	7	4
Cattle	5	3

Pellet Transect	
Pellet Groups per Acre '00	Days Use per Acre (ha) '00
35	N/A
44	3 (8)
191	15 (36)
-	-

BROWSE CHARACTERISTICS --
Herd unit 08B, Study no: 2

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier alnifolia																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	1	-	-	-	2	-	-	-	-	3	-	-	-	60	17	37	3
	00	3	-	-	1	-	-	-	-	-	4	-	-	-	80	30	50	4
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	1	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	50%	25%	00%	+ 0%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	0	Dec:		0%
'88	0			0%
'95	80			25%
'00	80			0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	10	-	-	1	-	-	-	-	-	11	-	-	-	733			11
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	8	-	-	3	-	-	-	-	-	11	-	-	-	220			11
Y	82	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	88	14	1	-	-	-	-	-	-	-	15	-	-	-	1000			15
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	9	-	-	-	-	-	-	-	-	8	-	1	-	180			9
M	82	32	-	-	-	-	-	-	-	-	32	-	-	-	2133	27	33	32
	88	8	12	-	-	-	-	-	-	-	20	-	-	-	1333	27	39	20
	95	19	35	22	1	5	1	-	-	-	83	-	-	-	1660	51	59	83
	00	55	10	1	2	3	-	-	-	-	68	-	3	-	1420	23	36	71
D	82	1	-	-	-	-	-	-	-	-	-	1	-	-	66			1
	88	22	15	-	-	-	1	-	-	-	34	1	3	-	2533			38
	95	5	19	11	-	6	-	-	-	-	23	-	-	18	820			41
	00	33	2	1	9	-	-	-	-	-	27	-	2	16	900			45
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	800			40
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	640			32

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	+52%
'88	38%	01%	04%	-49%
'95	52%	27%	15%	+ 1%
'00	12%	02%	18%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	2332	Dec:	3%
	'88	4866		52%
	'95	2480		33%
	'00	2500		36%

Chrysothamnus viscidiflorus lanceolatus																		
M	82	3	-	-	-	-	-	-	-	-	3	-	-	-	200	9	7	3
	88	1	-	-	1	-	-	-	-	-	2	-	-	-	133	15	7	2
	95	9	-	-	1	-	-	-	-	-	10	-	-	-	200	12	21	10
	00	11	-	-	-	-	-	-	-	-	11	-	-	-	220	9	13	11
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	+ 1%
'95	00%	00%	00%	+ 9%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	200	Dec:	0%
	'88	199		33%
	'95	200		0%
	'00	220		0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Eriogonum heracleoides																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	24	-	-	-	-	-	-	-	-	24	-	-	-	480			24
	00	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	125	-	-	-	-	-	-	-	-	125	-	-	-	2500	7	18	125
	00	113	-	-	12	-	-	-	-	-	125	-	-	-	2500	5	15	125
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	1	-	-	-	-	-	-	-	-	-	1	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	.66%	.66%	-13%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	0	Dec:		0%
'88	0			0%
'95	3000			1%
'00	2620			0%

Gutierrezia sarothrae																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	9	-	-	-	-	-	-	-	-	9	-	-	-	180	4	7	9
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'82	0	Dec:	-
'88	0		-
'95	180		-
'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Mahonia repens																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	20	4	-	2	-	-	3	-	-	29	-	-	-	1933			29
	95	50	-	-	-	-	-	-	-	-	50	-	-	-	1000			50
	00	12	-	-	-	-	-	-	-	-	12	-	-	-	240			12
M	82	9	-	-	-	-	-	-	-	-	9	-	-	-	600	5	4	9
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	95	-	-	-	-	-	-	-	-	95	-	-	-	1900	4	6	95
	00	16	-	-	-	-	-	-	-	-	16	-	-	-	320	4	4	16

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	+69%
'88	14%	00%	00%	+33%
'95	00%	00%	00%	-81%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	600	Dec:		-
'88	1933			-
'95	2900			-
'00	560			-

Purshia tridentata																		
Y	82	-	1	1	-	-	-	-	-	-	1	1	-	-	133			2
	88	-	3	-	1	-	-	-	-	-	1	-	3	-	266			4
	95	1	1	-	1	-	-	-	-	-	3	-	-	-	60			3
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	82	1	1	4	-	-	-	-	-	-	4	2	-	-	400	11	21	6
	88	-	1	4	-	1	2	-	-	-	8	-	-	-	533	14	22	8
	95	-	4	7	-	4	2	-	-	-	17	-	-	-	340	13	45	17
	00	4	9	-	-	4	-	-	-	-	17	-	-	-	340	20	63	17
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	1	-	-	-	-	1	-	-	1	40			2
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	25%	63%	00%	+33%
'88	42%	50%	25%	-50%
'95	45%	45%	00%	+ 5%
'00	67%	00%	05%	

Total Plants/Acre (excluding Dead & Seedlings)			
'82	533	Dec:	0%
'88	799		0%
'95	400		0%
'00	420		10%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Symphoricarpos oreophilus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	8	-	-	5	-	-	-	-	-	13	-	-	-	260	15	41	13
	00	4	-	-	3	-	-	1	-	-	7	-	1	-	160	24	63	8

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	-60%
'00	00%	00%	13%	

Total Plants/Acre (excluding Dead & Seedlings)			
'82	0	Dec:	-
'88	0		-
'95	400		-
'00	160		-